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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/732,994	12/10/2003	Laurence Ray McColloch	10020746-1	8304

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AVAGO TECHNOLOGIES, INC.  
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DENVER, CO 80201-1920

EXAMINER
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FLORES RUIZ, DELMA R

ART UNIT	PAPER NUMBER
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2828

DATE MAILED: 01/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/732,994

Applicant(s)

MCCOLLOCH, LAURENCE RAY

Examiner

Delma R. Flores Ruiz

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AW

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 8, 9, 11-13, 18 and 19 is/are rejected.
- 7) ☒ Claim(s) 4-6, 10, 14-16 and 20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Im et al (US 2003/0085475 A1) in view of Shinozaki et al (5,247,528).

***Regarding claim 1***, Im discloses in **Figure 3**, a laser package, comprising: a submount (100); a lid (108A) mounted on the first surface of the submount (100); and a soft metal (104, the reference call "TIM" (Thermal Interface Material)), and the soft metal cold flows faster than the laser die and the lid can thermally cycle (abstract, and Paragraph [0012]).

Im discloses the claimed invention except for laser die. However, it is well know in the art to apply the laser die as discloses by Shinozaki in (Column 3, Lines 1 – 12 and Column 6, Lines 26 – 32). Therefore, it would have been obvious to a person having ordinary skill in the art to apply the well know laser die as suggested by Shinozaki to

the laser of Im, because it will have fundamental wave leads to increase size of the overall second harmonic generation and the SHG using a dye laser for the light source for the fundamental wave see Column 3, Lines 1 - 12 of Shinozaki.

**Regarding claims 2 and 13**, Im do not explicitly discloses the metal pads.

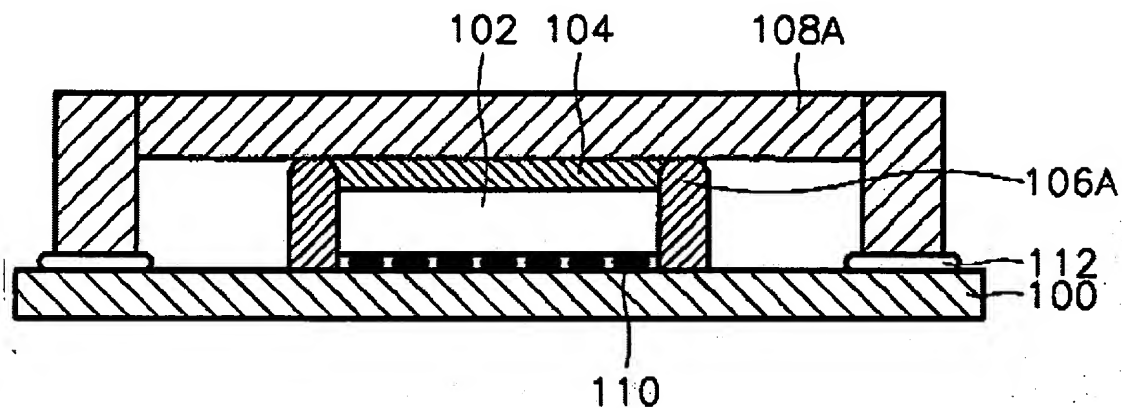
However, was shown above those Im metal pads. The metal pads will inherently to have to control the location of the metal and/ or control the wetting of the metal when it is liquid therefore the metal pads, therefore the pads they protect the elements of the laser package, and therefore these limitation are taught by Im.

**Regarding claim 11**, Im discloses in **Figure 3**, a method for forming a laser package, comprising: a first surface of a submount (100); placing a soft metal (104, the reference call "TIM" (Thermal Interface Material)), on the lid a lid (108A); and mounting the lid on the submount, wherein the soft metal cold flows faster than the laser die and the lid can thermally cycle (abstract, and Paragraph [0012]).

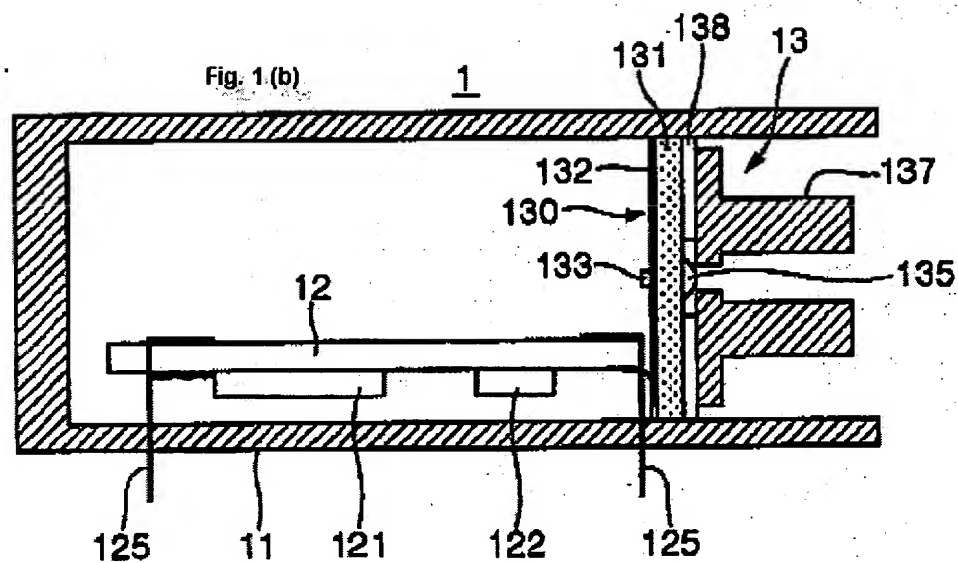
Im discloses the claimed invention except for laser die. However, it is well know in the art to apply the laser die as discloses by Shinozaki in (Column 3, Lines 1 – 12 and Column 6, Lines 26 – 32). Therefore, it would have been obvious to a person having ordinary skill in the art to apply the well know laser die as suggested by Shinozaki to the laser of Im, because it will using a dye laser for the light source for the fundamental wave see Column 3, Lines 1 - 12 of Shinozaki.

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In sown Figure 3



Nagasaka shown Figure 1



Claims 3 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Im et al (US 2003/0085475 A1) in view of Shinozaki et al (5,247,528), further in view of Dias et al (6,812,548).

Regarding claims 3 and 12, Im in view of Shinozaki discloses the claimed invention except for metal si selected from the group consisting of indium, gallium, mercury and tin/lead solder. However, it is well know in the art to apply the metal is selected from the group consisting of indium, gallium, mercury and tin/lead solder as discloses by Dias in Column 5, Lines 44 – 47. Therefore, it would have been obvious to a person having ordinary skill in the art to combine the well know metal is selected from the group consisting of indium, gallium, mercury and tin/lead solder as suggested by Dias to the laser of Im in view of Shinozaki, because it will this materials have a relatively high heat flow characteristics see Column 5, Lines 44 - 47 of Dias.

Claims 8, 9, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Im et al (US 2003/0085475 A1) in view of Shinozaki et al (5,247,528), further in view of Nagasaka et al (US 2004/0022487).

Regarding claims 8 and 18 discloses the claimed invention except for lens mounted on a second surface of the submount. However, it is well know in the art to apply the lens mounted on a second surface of the submount as discloses by Nagasaka

in Figure 1(b), Character 135. Therefore, it would have been obvious to a person having ordinary skill in the art to apply the well know lens mounted on a second surface of the submount as suggested by Nagasaka to the device of Im in view of Shinozaki, because it will be to such as a light receiver or a light emitter, and is used to focus light and focuses light that is incident upon the optical fiber or that exists from the optical fiber see Paragraphs [0004, 0025] of Nagasaka.

Regarding claims 9 and 19 discloses the claimed invention except for alignment pins mounted on a second surface of the submount. However, it is well know in the art to apply the alignment pins mounted on a second surface of the submount as discloses by Nagasaka in see Fig. 1(b) Character 137. Therefore, it would have been obvious to a person having ordinary skill in the art to apply the well know alignment pins mounted on a second surface of the submount as suggested by Nagasaka to the device of Im in view of Shinozaki, because it will used to alignment the laser package and used to mount an optical plug that holds one end of an optical fiber see Paragraph [0027] of Nagasaka.

***Allowable Subject Matter***

Claims 4 – 7, 10, 14 – 17 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


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### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Delma R. Flores Ruiz whose telephone number is (571) 272-1940. The examiner can normally be reached on M - F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Min Sun Harvey can be reached on (571) -272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Delma R. Flores Ruiz  
Examiner  
Art Unit 2828  
DRFR/MH  
January 19, 2006

  
Min Sun Harvey  
Supervisor Patent Examiner  
Art Unit 2828